



# SOPHIA JETTE

INTEGRATED SCIENCE  
AMBASSADOR

4TH YEAR, MAJOR

## THEME OF MY INTEGRATION: Molecular Epidemiology

Integrating Microbiology & Immunology and Public health will allow me to pursue a career in molecular epidemiology; an area that relates molecular and environmental risk factors to the distribution of disease across populations. Combining these disciplines will allow me to study the science behind how the human body deals with and contracts disease, while learning how to implement treatment for those diseases, and even create a plan to prevent the problems that we associate with environmental factors such as ambient and household air pollution

## WHAT I AM INTEGRATING:

### DISCIPLINE #1

#### Microbiology & Immunology:

Microbiology & Immunology will expose me to topics such as immunology (ex. MICB 302) – critical to my understanding of how the human body reacts to infections – as well as molecular virology (ex. MICB 306) and bacterial pathogenesis (ex. MICB 308, 408). Pursuing Microbiology and Immunology as one of my disciplines will inform me on how both bacterial and viral infections function within the human body which is critical for achieving my goal of becoming a molecular epidemiologist.

### DISCIPLINE #2

#### Public Health:

This discipline will help me to establish an understanding of how certain sociocultural and environmental conditions affect the health of populations (ex. SPPH 301, SPPH 381C), and may even cause disease. Studying Public Health will also facilitate my development of skills that will allow me to implement intervention plans and healthcare policy changes to achieve a specific health outcome in a population (SPPH 381D, SPPH 410).

## SAMPLE CURRICULUM RATIONALE

### MICB 308- Paradigms in Bacterial Pathogenesis

This course will introduce me to key ideas that will be discussed in-depth in MICB 408. I will gain a basic understanding of bacterial pathogenesis mechanisms including invasion, toxins, host defenses, antibiotics, and vaccines. MICB 308 will provide me with a foundation on the process by which bacteria infect and cause disease within a host, and I will be able to apply this to how humans contract bacterial infections as a molecular epidemiologist.

### SPPH 410- Improving Public Health: an Interprofessional Approach to Designing and Implementing Effective Interventions

The course SPPH 410 will provide me with the skills to propose realistic intervention plans to improve a specific health outcome by implementing changes to certain health behaviour for a target population. One of the roles of a molecular epidemiologist is to recommend changes to health policies within a certain region to improve the health of the population. Therefore, this course will provide me with a basic understanding on how to create an effective intervention plan for a population.

## CONTACT

sophiajette@hotmail.com